भारतीय मानक

Indian Standard

IS 9675 : 2023

वस्त्रादि — हल्के, मध्यम एवं भारी श्रेणियों के बुने हुए सूती फीते — विशिष्टि

(पहला पुनरीक्षण)

Textiles — Woven Cotton Tapes, Light, Medium and Heavy Qualities — Specification

(First Revision)

ICS 59.060.10; 59.080.50

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Technical Textiles for Clothtech Applications including Narrow Fabrics and Braids Sectional Committee, TXD 39

FOREWORD

This standard (First Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Technical Textiles for Clothtech Applications including Narrow Fabrics and Braids Sectional Committee had been approved by the Textile Division Council.

Woven cotton tapes are made from 100 percent natural unbleached cotton yarn without any finish or sizing. They have a high degree of absorption. These tapes are commonly used for tying, reinforcing textiles also used commonly by artists for finishing the edges of stretched canvases

This standard covers cotton tapes used mainly in the Indian Railways. Cotton tapes used in the defence are covered in IS 6117.

This standard was first published in 1980. This standard has been revised again to incorporate the following major changes:

a) Title of the standard has been modified;
b) All the amendments are incorporated; and
c) Sampling and criteria for conformity has been modified.

The composition of the Committee responsible for the formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TEXTILES — WOVEN COTTON TAPES, LIGHT, MEDIUM AND HEAVY QUALITIES — SPECIFICATION

(First Revision)

1 SCOPE

This standard covers light, medium and heavy qualities of cotton tapes used mainly in the Indian Railways.

2 REFERENCES

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

3 MANUFACTURE

3.1 The tapes should be uniformly woven in plain weave.

3.2 Both the selvedges of the tapes should be firm and straight.

3.3 The tapes shall be supplied in a clean condition, normally in the loomstate. If required to be processed, the processing shall be as stipulated in the contract or order.

3.3.1 If the tapes are required to be rot-proofed, the rot-proofing agent and the level of application shall be as stipulated in the contract or order.

3.4 The tapes should be free from cuts, tears, large floats, oil and greasy stains and other such defects that are likely to render them unserviceable.

3.5 The tapes should also be free from sizing and finishing materials.

4 REQUIREMENTS

4.1 Constructional Particulars

The loomstate constructional particulars of the tapes shall be as given in Table 1. Any deviation from the values given in the table resulting from processing shall be as specified in the contract or order.

4.1.1 *Tolerance on Width and Mass*

4.1.1.1 *Width*

The tolerance on width shall be ± 4 percent for loomstate and ± 6 percent for processed tapes, worked out to the nearest millimetre, with a minimum of ± 1 mm.

4.1.1.2 *Mass*

The tolerance on mass shall be ± 5 percent, worked out to the nearest centigram.

4.2 Length

Unless stipulated otherwise in the contract or order, the tapes shall be supplied in 50 m rolls for widths over 10 mm and in 1 000 m reels for widths of 10 mm and 5 mm. The length of the tape in a roll/reel shall be not less than that declared plus the allowance for cut lengths when tested as given in IS 1954.

4.2.1 *Joints*

The number of joints shall not exceed 2 in case of 50 m rolls and 19 in case of 1 000 m reels with the cut lengths measuring not less than 5 m each.

4.2.2 Pins or other metal fastenings shall not be used to join any two lengths of the tape.

4.2.3 An additional length of 25 cm per cut length shall be supplied in excess of the declared length in each roll/reel.

4.3 Chemical Requirements

The tapes shall meet the chemical requirements given in Table 2.

Table 1 Loomstate Constructional Particulars of Tapes

(*Clause* 4.1, 6.1 *and* 7.1)

Sl No.	Designation	Width, mm	Ends in Full Width *Min*	Picks/cm *Min*	Mass, g/m	Breaking Load on Full Width × 20 cm Between Grips, N(Kgf), *Min*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			LIGHT			
i)	L 5	5	13	8	0.65	45 (4.6)
ii)	L 10	10	21	9	1.15	75 (7.7)
iii)	L 15	15	33	10	1.90	115 (11.7)
iv)	L 20	20	45	11	2.50	160 (16.3)
v)	L 25	25	61		3.45	220 (22.4)
			MEDIUM			
vi)	M 5	5	17	12	0.95	70 (7.1)
vii)	M 10	10	29		1.60	135 (13.8)
viii)	M 15	15	41		2.30	180 (18.3)
ix)	M 20	20	55	14	3.10	245 (25.0)
x)	M 25	25	73		4.20	310 (31.6)
xi)	M 30	30	87		5.05	375 (38.2)
xii)	M 35	35	101		5.90	425 (43.3)
xiii)	M 45	45	129		7.45	535 (54.5)
xiv)	M 50	50	147		8.50	625 (63.7)
			HEAVY			
xv)	H 15	15	41	14	3.25	265 (27.0)
xvi)	H 20	20	55		4.40	380 (38.7)
xvii)	H 25	25	73		5.80	490 (50.0)
Method of Test, Ref to		IS 1954	IS 1963		IS 1964	IS 1969 (Part 1)

NOTES

1 Cotton yarn of 30s/2 (20 tex × 2) for warp and 24s (25 tex) for weft has been found suitable.

2 The test specimens for breaking load shall be conditioned for 48 hours in standard atmosphere [(65 ± 2) percent relative humidity and (25 ± 2) °C] before testing.

Table 2 Chemical Requirements of Tapes

(*Clause* 4.3)

Sl No.	Characteristic	Requirement			Method of Test
		Grey Tape	Scoured/Bleached Tape	Dyed Tape	
(1)	(2)	(3)	(4)	(5)	(6)
i)	Colour Fastness:				
	a) light	-	-	4 or better	IS/ISO 105-B02
	b) washing	-	-	4 or better	IS/ISO 105-C10
ii)	Scouring loss, percent, *Max*	6	3	3	IS 1383 (Severe method)
iii)	*p*H value	6.0 to 8.5			IS 1390

4.4 Sealed Sample

If in order to illustrate or specify general appearance, feel and such other characteristics of the tape, a sample has been agreed upon and sealed, the supply shall be in conformity with the sample in such respects.

4.4.1 The custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.

5 PACKING

Unless otherwise agreed between the buyer and seller, each roll/reel of tape shall be wrapped in polyethylene film (*see* IS 2508) or waterproof packing paper (*see* IS 1398). A suitable number of such rolls/reels shall then be packed in a carton or crate. Separators may also be used between rolls/reels.

6 MARKING

6.1 Each roll/reel shall carry a label in a secured manner, marked legibly with the following:

a) Designation (*see* Table 1);
b) Length (m) and net mass (g);
c) Name and address or trade-mark of the manufacturer and/or packer;
d) The expression ‘loomstate’, if applicable;
e) Whether unproofed or rot-proofed;
f) Colour, in the case of dyed tapes, and the expression ‘grey’, ‘scoured’ or ‘bleached’, as applicable, in the case of other tapes;
g) Date of packing, in suitable code; and
h) Any other information/instruction provided by the manufacturer/required under law.

6.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.

7 SAMPLING

7.1 Lot

The quantity of tape of the same designation (*see* Table 1) and finish in a consignment shall constitute a lot.

7.2 Unless specified otherwise in the contract or order, the number of rolls/reels to be selected at random from a lot shall be as given in Table 3. To ensure randomness of selection, IS 4905 may be followed.

Table 3 Sample Size for Tapes

(*Clause* 7)

Sl No. (1)	**Lot Size, Rolls/Reels** (2)	**Sample Size, Rolls/Reels (For Length, Width, Ends and Picks)** (3)	**Permissible No. of Defectives, Rolls/Reels** (4)	**Sub-Sample Size, Rolls/Reels (For Remaining Requirements)** (5)
i)	Up to 50	3	0	3
ii)	51 to 150	5	0	3
iii)	151 to 300	8	1	4
iv)	301 to 500	13	1	5
v)	501 and Above	20	2	7

NOTES

1 In the case of length, the value obtained for the length of each roll shall be compared with its specified, declared or marked length. The mean percentage of deficiency in length, if any, shall be determined and made applicable to the lot.

2 In respect of mass, breaking strength, water and rot chemical requirements, Mean + 0.4 range shall not outpass specified values.

3 In respect of colour fastness, no failure shall be permissible.

7.3 For evaluating length, width, ends and picks, the rolls/reels selected as in col (2) of Table 3 shall constitute the test sample.

7.4 For evaluating breaking load, colour fastness, mass, *p*H value and scouring loss, the rolls/reels selected as in col (4) of Table 3 shall constitute the test sample; these rolls/reels may be drawn from those selected for the purpose of **4.3**.

7.5 Criteria for Conformity

The criteria for conformity of the tape in respect of various characteristics shall be as follows:

Characteristic(s)	*Criterion for Conformity*
Length, width, ends and picks	Number of defective rolls does not exceed the corresponding number given in col (3) of Table 3
Breaking load	‘Mean 0.6 range’ ≥ the specified value
Colour fastness	All the test specimens pass the tests
Mass and *pH* value	‘Mean ± 0.6 range’ lie within the specified limits
Scouring loss	‘Mean + 0.6 range’ ≤ the specified value

ANNEX A

(*Clause* 2)

LIST OF REFERRED STANDARDS

IS No.	*Title*
IS 1383 : 1977	Methods for determination of scouring loss in grey and finished cotton textile materials (*first revision*)
IS 1390 : 2022/ ISO 3071 : 2022	Methods for determination of *p*H value of aqueous extract of textile materials (*third revision*)
IS 1398 : 1982	Specification for Packing paper water proof, bitumen-laminated (*second revision*)
IS 1954 : 1990	Determination of length and width of woven fabrics — Methods (*second revision*)
IS 1963 : 1981	Methods for determination of threads per unit length in woven fabrics (*second revision*)
IS 1964 : 2001	Textiles — Methods for determination of mass per unit length and mass per unit area of fabrics (*second revision*)
IS 1969 (Part 1) : 2018/ISO 13934-1 : 2013	Textiles — Tensile properties of fabrics: Part 1 Determination of maximum force and elongation at maximum force using the strip method (*fourth revision*)
IS 2508 : 2016	Polyethylene Films and Sheets — Specification (*third revision*)
IS/ISO 105-C10 : 2006	Textiles — Tests for colour fastness: Part C10 Colour fastness to washing with soap or soap and soda
IS/ISO 105-B02 : 2014	Textiles — Tests for colour fastness: Part B02 Colour fastness to artificial light: Xenon arc fading lamp test

ANNEX B

(*Foreword*)

COMMITTEE COMPOSITION

Technical Textiles for Clothtech Applications including Narrow Fabrics and Braids Sectional Committee, TXD 39

Organization	*Representative(s)*
Additional Controller CQA (General Stores), DGQA, Ministry of Defence, Kanpur	SHRI A. CHOWDHURY **(*Chairperson*)**
Apparel Export Promotion Council New Delhi	SHRI PRAVEEN KUKREJA
Defence Materials & Stores Research & Development Establishment, Kanpur	SHRI A. K. YADAV MS PRIYANKA KATIYAR (*Alternate*)
DKTE's Society Textile & Engineering Institute, Ichalkaranji	DR S. B. VHANBATTE SHRI RAJANNA GOTIPAMUL (*Alternate*)
Federation of Indian Chambers of Commerce and Industry, New Delhi	SHRI ANU HANDA
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JCT Limited, Phagwara	SHRI KUSHWINDER SINGH SHRI ARWINDER SINGH (*Alternate*)
M K U Limited, Kanpur	SHRI SUMIT KHANDELWAL SHRI RAJIB PAL (*Alternate*)
Motilal Dulichand Pvt Ltd, Kanpur	SHRI SHAILENDRA NATH MISRA SHRI SUDHIR SHIVHARE (*Alternate*)
National Textile Corporation, New Delhi	SHRI R. K. YADAV
Office of the Textile Commissioner, Mumbai	SHRI V. K. KOHLI SHRI HUMAYUN K. (*Alternate*)
Ordnance Parachute Factory, Kanpur	SHRI V. M. BAGADE SHRI S. KONDAIAH (*Alternate*)
Planet Analysis Pvt Ltd, Kanpur	SHRI PRASHANTA BISWAS
S L Banthia Textiles Industries Pvt Ltd, Surat	SHRI SANTOSH KUMAR BANTHIA
SGS Limited, Gurugram	MS ANITHA JEYARAJ SHRI GAURAV SARASWAT (*Alternate*)
Shipra International, Kanpur	SHRI ABHISHEK KUMAR AGRAWAL

Organization	*Representative(s)*
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Synthetic and Art Silk Mills Research Association, Mumbai	Shri Sanajy Saini Shri Premnath Surwase (*Alternate*)
Testtex India Laboratories Pvt Ltd, Mumbai	Shrimati Meeta Shigala Shri Chandrakant (*Alternate*)
Textiles Committee, New Delhi	Shri R. Chandran Shri Ganesh P. Bangar (*Alternate*)
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The Bombay Textile Research, Association, Mumbai	Shri Shaikh Riyaz Ahmed Dr Prasanta Kumar Panda (*Alternate*)
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Member Secretary
Shri Tanishq Awasthi
Scientist 'B'/Assistant Director
(Textiles), BIS

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